

Flight Model Calibration of the Stellar X-Ray Polarimeter

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Abstract

The Stellar X-Ray Polarimeter (SXP), sensitive to x-rays between 2 and 15 keV, will be more than an order of magnitude more sensitive than any previous x-ray polarimeter. The SXP is a focal plane detector for a Danish-Russian SODART telescope, which will be launched on the Russian Spectrum-X-Gamma (SXG) mission. The SXP exploits the polarization dependence of Bragg reflection from a graphite crystal, and of Thomson scattering from a target of metallic lithium.

The SXP was calibrated at a facility at Lawrence Livermore National Laboratories equipped with polarized and unpolarized x-ray sources producing x-rays in the band pass for the graphite and the lithium scatterers. By adjusting the orientation of the SXP with respect to the incident x-ray beam, it is possible to simulate the converging beam from a SODART telescope and to measure the SXP response to telescope pointing errors. Here, we present SXP-FM calibration results.

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